Robert L Dewar

List of Publications by Year
in descending order

133 papers	3,617 citations	126907 33 h-index	149698 56 g-index
140 all docs	140 docs citations	140 times ranked	1564 citing authors

#	Article	IF	Citations
1	Ballooning mode spectrum in general toroidal systems. Physics of Fluids, 1983, 26, 3038.	1.4	273
2	Interaction between Hydromagnetic Waves and a Time-Dependent, Inhomogeneous Medium. Physics of Fluids, 1970, 13, 2710.	1.4	235
3	Turbulent edge structure formation in complex configurations. Physics of Plasmas, 2003, 10, 3684-3691.	1.9	202
4	Ideal MHD stability calculations in axisymmetric toroidal coordinate systems. Journal of Computational Physics, 1983, 49, 94-117.	3.8	167
5	Theory and simulation of rotational shear stabilization of turbulence. Physics of Plasmas, 1998, 5, 1784-1792.	1.9	127
6	Computation of multi-region relaxed magnetohydrodynamic equilibria. Physics of Plasmas, 2012, 19, .	1.9	104
7	Frequency Shift Due to Trapped Particles. Physics of Fluids, 1972, 15, 712.	1.4	91
8	Energy principle with global invariants. Physics of Fluids, 1982, 25, 887.	1.4	88
9	Bifurcation in electrostatic resistive drift wave turbulence. Physics of Plasmas, 2007, 14, .	1.9	88
10	n-dependence of ballooning instabilities. Nuclear Fusion, 1981, 21, 493-498.	3.5	87
11	Oscillation center quasilinear theory. Physics of Fluids, 1973, 16, 1102.	1.4	78
12	Long-wavelength kink instabilities in low-pressure, uniform axial current, cylindrical plasmas with elliptic cross sections. Physics of Fluids, 1974, 17, 930.	1.4	75
13	Energy - Momentum Tensors for Dispersive Electromagnetic Waves. Australian Journal of Physics, 1977, 30, 533.	0.6	69
14	On the backscatter instability of solar wind AlfvÃ©n waves. Journal of Geophysical Research, 1974, 79, 4174-4178.	3.3	65
15	Coupled tearing modes in plasmas with differential rotation. Physics of Fluids B, 1993, 5, 4273-4286.	1.7	63
16	A Lagrangian theory for nonlinear wave packets in a collisionless plasma. Journal of Plasma Physics, 1972, 7, 267-284.	2.1	62
17	Modulational Instabilities Due to Trapped Electrons. Physical Review Letters, 1972, 28, 215-217.	7.8	62
18	Linear Stability of Resistive MHD Modes: Axisymmetric Toroidal Computation of the Outer Region Matching Data. Journal of Computational Physics, 1994, 115, 530-549.	3.8	58

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19	Renormalised canonical perturbation theory for stochastic propagators. Journal of Physics A, 1976, 9, 2043-2057.	1.6	57
20	Stellarator symmetry. Physica D: Nonlinear Phenomena, 1998, 112, 275-280.	2.8	57
21	Energy Principle with Global Invariants for Toroidal Plasmas. Physical Review Letters, 1980, 45, 347-350.	7.8	55
22	Influence of diamagnetic drifts on critical beta in tokamaks. Nuclear Fusion, 1982, 22, 1079-1081.	3.5	48
23	Non-ideal stability: variational method for the determination of the outer-region matching data. Journal of Plasma Physics, 1991, 45, 427-451.	2.1	45
24	Improved Particle Confinement Mode in the H-1 Heliac Plasma. Physical Review Letters, 1996, 77, 4190-4193.	7.8	43
25	Tilting and shifting modes in a spheromak. Nuclear Fusion, 1981, 21, 1203-1207.	3.5	40
26	Spectrum of ballooning instabilities in a stellarator. Physics of Plasmas, 1996, 3, 275-280.	1.9	39
27	Eigenvalue problems for Beltrami fields arising in a three-dimensional toroidal magnetohydrodynamic equilibrium problem. Physics of Plasmas, 2007, 14, 052505.	1.9	38
28	Saturation of kinetic plasma instabilities by particle trapping. Physics of Fluids, 1973, 16, 431.	1.4	37
29	Magnetic coordinates for equilibria with a continuous symmetry. Physics of Fluids, 1984, 27, 1723.	1.4	36
30	MHD stability properties of bean-shaped tokamaks. Nuclear Fusion, 1985, 25, 805-823.	3.5	36
31	Nonlinear destabilization of linearly stable tearing modes with multiple rational surfaces. Physics of Plasmas, 1994, 1, 1256-1263.	1.9	35
32	Equilibria and stability in partially relaxed plasmaâ€“vacuum systems. Nuclear Fusion, 2007, 47, 746-753.	3.5	34
33	Relaxed Plasma Equilibria and Entropy-Related Plasma Self-Organization Principles. Entropy, 2008, 10, 621-634.	2.2	34
34	Heliac parameter study. Physics of Fluids, 1984, 27, 1248.	1.4	32
35	Stepped pressure profile equilibria in cylindrical plasmas via partial Taylor relaxation. Journal of Plasma Physics, 2006, 72, 1167.	2.1	31
36	Variational method for three-dimensional toroidal equilibria. Computer Physics Communications, 1984, 31, 213-225.	7.5	28

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37	Almost invariant manifolds for divergence-free fields. Physics Letters, Section A: General, Atomic and Solid State Physics, 1994, 194, 49-56.	2.1	27
38	A Lagrangian Derivation of the Action-Conservation Theorem for Density Waves. Astrophysical Journal, 1972, 174, 301.	4.5	27
39	Nonlinear Frequency Shift of a Plasma Wave. Physics of Fluids, 1972, 15, 820.	1.4	26
40	Non-axisymmetric, multi-region relaxed magnetohydrodynamic equilibrium solutions. Plasma Physics and Controlled Fusion, 2012, 54, 014005.	2.1	26
41	The infinite interface limit of multiple-region relaxed magnetohydrodynamics. Physics of Plasmas, 2013, 20, 032509.	1.9	26
42	Variational formulation of relaxed and multi-region relaxed magnetohydrodynamics. Journal of Plasma Physics, 2015, 81, .	2.1	25
43	Two-dimensional generalizations of the Newcomb equation. Journal of Plasma Physics, 1990, 43, 291-310.	2.1	24
44	Bifurcation of the resistive AlfvÃ©n wave spectrum. Journal of Plasma Physics, 1984, 32, 443-461.	2.1	22
45	Minimally Constrained Model of Self-Organized Helical States in Reversed-Field Pinches. Physical Review Letters, 2013, 111, 055003.	7.8	22
46	The linear stability analysis of MHD models in axisymmetric toroidal geometry. Computer Physics Communications, 1981, 24, 355-361.	7.5	20
47	Toroidally localized and nonlocalized ballooning instabilities in a stellarator. Physics of Plasmas, 1998, 5, 2921-2931.	1.9	19
48	Coordinate parameterisation and spectral method optimisation for Beltrami field solver in stellarator geometry. Plasma Physics and Controlled Fusion, 2020, 62, 124004.	2.1	19
49	Manipulation of islands in a heliac vacuum field. Physics Letters, Section A: General, Atomic and Solid State Physics, 1997, 226, 85-92.	2.1	18
50	Dressed test particles, oscillation centres and pseudo-orbits. Plasma Physics and Controlled Fusion, 2012, 54, 014002.	2.1	18
51	ZONAL FLOW GENERATION BY MODULATIONAL INSTABILITY. , 2007, , .		18
52	Flux-minimizing curves for reversible area-preserving maps. Physica D: Nonlinear Phenomena, 1992, 57, 476-506.	2.8	17
53	Spectrum of the ballooning SchrÃ¶dinger equation. Plasma Physics and Controlled Fusion, 1997, 39, 453-470.	2.1	17
54	Induced scattering of light by light in a vacuum. Physical Review A, 1974, 10, 2107-2111.	2.5	16

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55	Energy loss due to binary collisions in a relativistic plasma. Physical Review A, 1979, 20, 2120-2129.	2.5	16
56	Construction of an integrable field close to any non-integrable toroidal magnetic field. Physics Letters, Section A: General, Atomic and Solid State Physics, 1998, 247, 246-251.	2.1	16
57	Helical bifurcation and tearing mode in a plasmaâ€"a description based on Casimir foliation. Journal of Physics A: Mathematical and Theoretical, 2012, 45, 365502.	2.1	16
58	Plasmoid solutions of the Hahmâ€"Kulsrudâ€"Taylor equilibrium model. Physics of Plasmas, 2013, 20, .	1.9	16
59	Numerical study of the magnetohydrodynamic spectra in tokamaks using galerkin's method. Journal of Computational Physics, 1975, 18, 132-153.	3.8	15
60	Analysis of perturbed magnetic fields via construction of nearby integrable fields. Physics of Plasmas, 1999, 6, 1532-1538.	1.9	15
61	Non-linear dynamics. , 2000, , 167-248.		15
62	Anderson-localized ballooning modes in general toroidal plasmas. Physics of Plasmas, 2000, 7, 2302-2305.	1.9	14
63	Relaxed MHD states of a multiple region plasma. Nuclear Fusion, 2009, 49, 065019.	3.5	14
64	Almost-invariant surfaces for magnetic field-line flows. Journal of Plasma Physics, 1996, 56, 361-382.	2.1	13
65	Strong â€œQuantumâ€•Chaos in the Global Ballooning Mode Spectrum of Three-Dimensional Plasmas. Physical Review Letters, 2001, 86, 2321-2324.	7.8	13
66	Hamiltonâ€"Jacobi theory for continuation of magnetic field across a toroidal surface supporting a plasma pressure discontinuity. Physics Letters, Section A: General, Atomic and Solid State Physics, 2010, 374, 3308-3314.	2.1	13
67	Stepped pressure equilibrium with relaxed flow and applications in reversed-field pinch plasmas. Plasma Physics and Controlled Fusion, 2020, 62, 054002.	2.1	13
68	Energy principle with global invariants: Applications. Physics of Fluids, 1983, 26, 526.	1.4	12
69	A new formulation of the resistive tearing mode stability criterion. Physics of Fluids B, 1993, 5, 1593-1604.	1.7	12
70	Metamorphosis of plasma turbulenceâ€"shear-flow dynamics through a transcritical bifurcation. Physical Review E, 2002, 66, 066408.	2.1	12
71	Hamiltonian Maps for Heliac Magnetic Islands. Australian Journal of Physics, 1995, 48, 871.	0.6	12
72	Magnetohydrodynamic stability of plasmas with ideal and relaxed regions. Journal of Plasma Physics, 2009, 75, 637-659.	2.1	11

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73	Fundamental Fluid Mechanics and Magnetohydrodynamics. , 2016, , .		11
74	Multi-region relaxed magnetohydrodynamics with flow. Physics of Plasmas, 2014, 21, 042501.	1.9	10
75	Computation of linear MHD instabilities with the multi-region relaxed MHD energy principle. Plasma Physics and Controlled Fusion, 2021, 63, 045006.	2.1	10
76	Exact oscillation-centre transformations. Journal of Physics A, 1978, 11, 9-26.	1.6	9
77	Galerkin method for differential equations with regular singular points. Journal of Computational Physics, 1986, 66, 356-390.	3.8	9
78	Symmetry breaking bifurcations of a current sheet. Physics of Fluids B, 1990, 2, 508-515.	1.7	9
79	Statistical Mechanics of Ideal Fermions in a Thin Film. Physical Review, 1968, 165, 283-287.	2.7	8
80	Optimal oscillation-center transformations. Physica D: Nonlinear Phenomena, 1985, 17, 37-53.	2.8	8
81	The free-boundary equilibrium problem for helically symmetric plasmas. Journal of Computational Physics, 1988, 74, 477-487.	3.8	8
82	Nonlinear selfâ€reinforced growth of tearing modes with multiple rational surfaces. Physics of Fluids B, 1993, 5, 3844-3846.	1.7	8
83	Comment on â€œRadial Structure of High-Mode-Number Toroidal Modes in General Equilibrium Profilesâ€. Physical Review Letters, 1995, 74, 4563-4563.	7.8	8
84	Singularity Theory Study of Overdetermination in Models forLâ^'HTransitions. Physical Review Letters, 2000, 84, 3077-3080.	7.8	8
85	The spectrum of multi-region-relaxed magnetohydrodynamic modes in topologically toroidal geometry. Plasma Physics and Controlled Fusion, 2017, 59, 044009.	2.1	8
86	Time-dependent relaxed magnetohydrodynamics: Inclusion of cross helicity constraint using phase-space action. Physics of Plasmas, 2020, 27, .	1.9	8
87	Renormalized Lie perturbation theory. Journal of Mathematical Physics, 1982, 23, 2328-2338.	1.1	7
88	Rational quadratic-flux minimizing circles for area-preserving twist maps. Physica D: Nonlinear Phenomena, 1995, 85, 66-78.	2.8	7
89	Particle orbits and drift surfaces in a heliac. Nuclear Fusion, 1998, 38, 1001-1012.	3.5	7
90	Asymptotologyâ€"a cautionary tale. ANZIAM Journal, 2002, 44, 33-40.	0.2	7

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91	Stellarator stability with respect to global kinetic ballooning modes. Nuclear Fusion, 2006, 46, 477-486.	3.5	7
92	Are ghost surfaces quadratic-flux-minimizing?. Physics Letters, Section A: General, Atomic and Solid State Physics, 2009, 373, 4409-4415.	2.1	7
93	A reduced global AlfvÃ©n eigenmodes model for Mirnov array data on the H-1NF heliac. Plasma Physics and Controlled Fusion, 2011, 53, 085023.	2.1	7
94	Multi-region relaxed magnetohydrodynamics with anisotropy and flow. Physics of Plasmas, 2014, 21, 072512.	1.9	7
95	Hamilton's principle for a hydromagnetic fluid with a free boundary. Nuclear Fusion, 1978, 18, 1541-1553.	3.5	6
96	Statistical characterization of the interchange-instability spectrum of a separable ideal-magnetohydrodynamic model system. Physical Review E, 2004, 70, 066409.	2.1	6
97	Multi-region relaxed magnetohydrodynamics in plasmas with slowly changing boundariesâ€”Resonant response of a plasma slab. Physics of Plasmas, 2017, 24, .	1.9	6
98	Fluctuations of the runaway electron flux to the PLT tokamak limiter. Physics Letters, Section A: General, Atomic and Solid State Physics, 1981, 81, 275-277.	2.1	5
99	Oscillation-center autocorrelation time. Physics Letters, Section A: General, Atomic and Solid State Physics, 1985, 111, 391-395.	2.1	5
100	Anderson localization of ballooning modes, quantum chaos and the stability of compact quasiaxially symmetric stellarators. Physics of Plasmas, 2002, 9, 1990-1996.	1.9	5
101	Action-gradient-minimizing pseudo-orbits and almost-invariant tori. Communications in Nonlinear Science and Numerical Simulation, 2012, 17, 2062-2073.	3.3	5
102	On the non-existence of stepped-pressure equilibria far from symmetry. Plasma Physics and Controlled Fusion, 2021, 63, 125007.	2.1	5
103	Energy Principle with Globial Invariants for Toroidal Plasmas. Physical Review Letters, 1980, 45, 1217-1217.	7.8	3
104	Subdynamics of nonresonant wave-particle interactions. Physical Review A, 1986, 33, 3440-3445.	2.5	3
105	A harmonic expansion for the magnetic field of the helical solenoid. Journal of Computational Physics, 1988, 77, 485-500.	3.8	3
106	Chirality-dependent Plasma Density Profile Changes from Helicon Wave Ponderomotive Forces. Australian Journal of Physics, 1995, 48, 691.	0.6	3
107	Adiabatic Wave-Particle Interaction Revisited. Plasma and Fusion Research, 2009, 4, 001-001.	0.7	3
108	Random phase wave: A soluble nonâ€Markovian system. Journal of Mathematical Physics, 1978, 19, 1946-1951.	1.1	2

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109	2-D, nonlinear spectral simulation of reconnective transitions on a periodic, planar current sheet with (1) smooth and (2) corrugated conducting wall boundary conditions with flow. Computer Physics Communications, 1990, 59, 1-12.	7.5	2
110	Gravitational collapse of a magnetized vortex: application to the Galactic Centre. Monthly Notices of the Royal Astronomical Society, 1995, , .	4.4	2
111	Anomalous transport barriers due to sheared radial electric fields in tokamaks. Plasma Physics and Controlled Fusion, 1995, 37, 1311-1336.	2.1	2
112	Quasilinear theory of collisionless Fermi acceleration in a multicusp magnetic confinement geometry. Physical Review E, 1999, 60, 7400-7411.	2.1	2
113	Resistive stability of cylindrical MHD equilibria with radially localized pressure gradients. Physics of Plasmas, 2019, 26, .	1.9	2
114	Theoretical description of chirping waves using phase-space waterbags. Plasma Physics and Controlled Fusion, 2021, 63, 065008.	2.1	2
115	Quasisymmetric magnetic fields in asymmetric toroidal domains. Physics of Plasmas, 2021, 28, .	1.9	2
116	Overview of Australian activities of fusion neutronics. Fusion Engineering and Design, 1999, 45, 117-126.	1.9	1
117	A comparison of incompressible limits for resistive plasmas. Plasma Physics and Controlled Fusion, 2004, 46, 1027-1038.	2.1	1
118	Generalized action-angle coordinates defined on island chains. Plasma Physics and Controlled Fusion, 2013, 55, 014004.	2.1	1
119	Predicting nonresonant pressure-driven MHD modes in equilibria with low magnetic shear. Physics of Plasmas, 2021, 28, 012106.	1.9	1
120	NONLINEAR SIMULATION OF DRIFT WAVE TURBULENCE. , 2007, , .		1
121	Relaxed magnetohydrodynamics with ideal Ohm's law constraint. Journal of Plasma Physics, 2022, 88, .	2.1	1
122	Plasma progress. Physics in Technology, 1975, 6, 228-228.	0.2	0
123	Comment on â€˜â€˜Simulations of the single-mode, bump-on-tail instabilityâ€™â€™ [Phys. Fluids 28, 2773 (1985)]. Physics of Fluids, 1986, 29, 1751.	1.4	0
124	Particle orbits and drift surfaces in a heliac. Nuclear Fusion, 1998, 38, 1577-1578.	3.5	0
125	Spectrum of global ideal-magnetohydrodynamic three-dimensional ballooning modes. Space Science Reviews, 2003, 107, 349-352.	8.1	0
126	Bifurcation and Metamorphosis of Plasma Turbulence-Shear Flow Dynamics: the Path to the Top of the Hill. AIP Conference Proceedings, 2003, , .	0.4	0

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127	Charge to the Astro Brigade. Physics Today, 2005, 58, 15-15.	0.3	0
128	Quantum chaos analysis of the ideal interchange spectrum in a stellarator. Journal of Plasma Physics, 2006, 72, 1239.	2.1	0
129	MHD memes. Journal of Physics: Conference Series, 2009, 169, 012004.	0.4	0
130	Diamagnetic drift stabilized ballooning modes in a 3D heliotron. Plasma Physics and Controlled Fusion, 2012, 54, 014006.	2.1	0
131	Spectrum of Global Ideal-Magnetohydrodynamic Three-Dimensional Ballooning Modes. , 2003, , 349-352.		0
132	The Screened Field of a Test Particle. , 2009, , 47-73.		0
133	Quasi-two-dimensional Waves in Three-dimensional Magnetic Confinement Systems. Physica Scripta, 1998, T75, 134.	2.5	0